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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,129	11/12/2003	Robert Paul Masleid	TRAN-P294	8181

7590 04/27/2005  
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EXAMINER

WEISS, HOWARD

ART UNIT PAPER NUMBER

2814

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/712,129	MASLEID ET AL.	
	Examiner	Art Unit	
	Howard Weiss	2814	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 26 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 ~~is~~ are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-30 are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Attorney's Docket Number: TRAN-P294

Filing Date: 11/12/03

Continuing Data: none

Claimed Foreign Priority Date: none

Applicant(s): Masleid et al. (Burr, Pelham)

Examiner: Howard Weiss

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1 and 6 to 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts (U.S. Patent No. 6,180,998) and Moyer et al. (U.S. Patent No. 5,355,008).

Crafts shows most aspects of the instant invention (e.g. Figures 1 to 8) including:

- a plurality of sub-surface N-type conductivity regions **68** form beneath the surface of a substrate **24** and having a strip shape

- a metal mesh **104** formed above the surface of said substrate and coupled to said sub-surface regions via spaced taped contacts **82,88**
- the combination of the sub-surface regions and metal mesh routes either a single or more body- bias voltages **28,30,34,36**

Crafts does not show the RC property of the sub-surface regions being higher than the combination of said regions and mesh, the sub-surface regions being p-type doped. Moyer et al. teach (e.g. Column 3 Line 60 to Column 4 Line 15) to form device in either N or P type doping and to adjust the properties of the materials to reduce resistance without sacrificing area (Column 3 Lines 32 to 40). It would have been obvious to a person of ordinary skill in the art at the time of invention to form device in either N or P type doping and to adjust the properties of the materials as taught by Moyer et al. in the device of Crafts to reduce resistance without sacrificing area.

3. Claims 2 to 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts and Moyer et al., as applied to Claim 1 above, and further in view of Pelham et al. (U.S. Patent Application No. 2004/0124475).

Crafts and Moyer et al. show mast aspects of the instant invention (Paragraph 2) except for the sub-surface region either in a diagonal or axial mesh or in a diagonal or axial strip structure. Pelham et al. teach (e.g. Figures 3 to 5) to have subsurface region **310** in a diagonal or axial mesh or in a diagonal or axial strip structure to minimize the consumption of resources (Paragraph **[0004]**). It would have been obvious to a person of ordinary skill in the art at the time of invention to have subsurface region in a diagonal or axial mesh or in a diagonal or axial strip structure as taught by Pelham et al. in the device of Crafts and Moyer et al. to minimize the consumption of resources.

4. Claims 11 and 16 to 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts and Moyer et al., as applied to Claim 1 above, and further in view of Ratchkov et al. (U.S. Patent Application No. 2004/0085099).

Crafts and Moyer et al. show most aspects of the instant invention (Paragraph 2) except for the metal ring structure. Ratchkov et al. teach (e.g. Figure 2) to use a metal ring structure **12,14** above a substrate **10** to keep voltage losses at a low value (Paragraph **[0006]**). It would have been obvious to a person of ordinary skill in the art at the time of invention to use a metal ring structure above a substrate as taught by Ratchkov et al. in the device of Crafts and Moyer et al. to keep voltage losses at a low value.

5. Claims 12 to 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts, Moyer et al. and Ratchkov et al., as applied to Claim 11 above, and further in view of Pelham et al. (U.S. Patent Application No. 2004/0124475).

Crafts, Moyer et al. and Ratchkov et al. show most aspects of the instant invention (Paragraph 4) except for the sub-surface region either in a diagonal or axial mesh or in a diagonal or axial strip structure. Pelham et al. teach (e.g. Figures 3 to 5) to have subsurface region **310** in a diagonal or axial mesh or in a diagonal or axial strip structure to minimize the consumption of resources (Paragraph **[0004]**). It would have been obvious to a person of ordinary skill in the art at the time of invention to have subsurface region in a diagonal or axial mesh or in a diagonal or axial strip structure as taught by Pelham et al. in the device of Crafts, Moyer et al. and Ratchkov et al. to minimize the consumption of resources.

6. Claims 21 and 26 to 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts and Moyer et al., as applied to Claim 1 above, and further in view of Igarashi et al. (U.S. Patent No. 6,813,756).

Crafts and Moyer et al. show most aspects of the instant invention (Paragraph 2) except for the metal branching tree structure. Igarashi et al. teach (e.g. Figures 19 and 20) to use a metal branching tree structure **101-105** above a substrate **100** to ease the computation of balances in circuit design (Column 17 Lines 39 to 41). It would have been obvious to a person of ordinary skill in the art at the time of invention to use a metal branching tree structure above a substrate as taught by Igarashi et al. in the device of Crafts and Moyer et al. to ease the computation of balances in circuit design.

7. Claims 22 to 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crafts, Moyer et al. and Igarashi et al., as applied to Claim 11 above, and further in view of Pelham et al. (U.S. Patent Application No. 2004/0124475).

Crafts, Moyer et al. and Igarashi et al. show most aspects of the instant invention (Paragraph 6) except for the sub-surface region either in a diagonal or axial mesh or in a diagonal or axial strip structure. Pelham et al. teach (e.g. Figures 3 to 5) to have subsurface region **310** in a diagonal or axial mesh or in a diagonal or axial strip structure to minimize the consumption of resources (Paragraph **[0004]**). It would have been obvious to a person of ordinary skill in the art at the time of invention to have subsurface region in a diagonal or axial mesh or in a diagonal or axial strip structure as taught by Pelham et al. in the device of Crafts, Moyer et al. and Igarashi et al. to minimize the consumption of resources.

### ***Conclusion***

8. Paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site

([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

9. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 872-9306**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(571) 272-1720** and between the hours of 7:00 AM to 3:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via [Howard.Weiss@uspto.gov](mailto:Howard.Weiss@uspto.gov). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on **(571) 272-1705**.

11. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/371,758; 438/224, 228	4/20/05
Other Documentation: PLUS Analysis Report	4/15/05
Electronic Database(s): EAST	4/20/05

HW/hw  
21 April 2005

Howard Weiss  
Primary Patent Examiner  
Art Unit 2814

